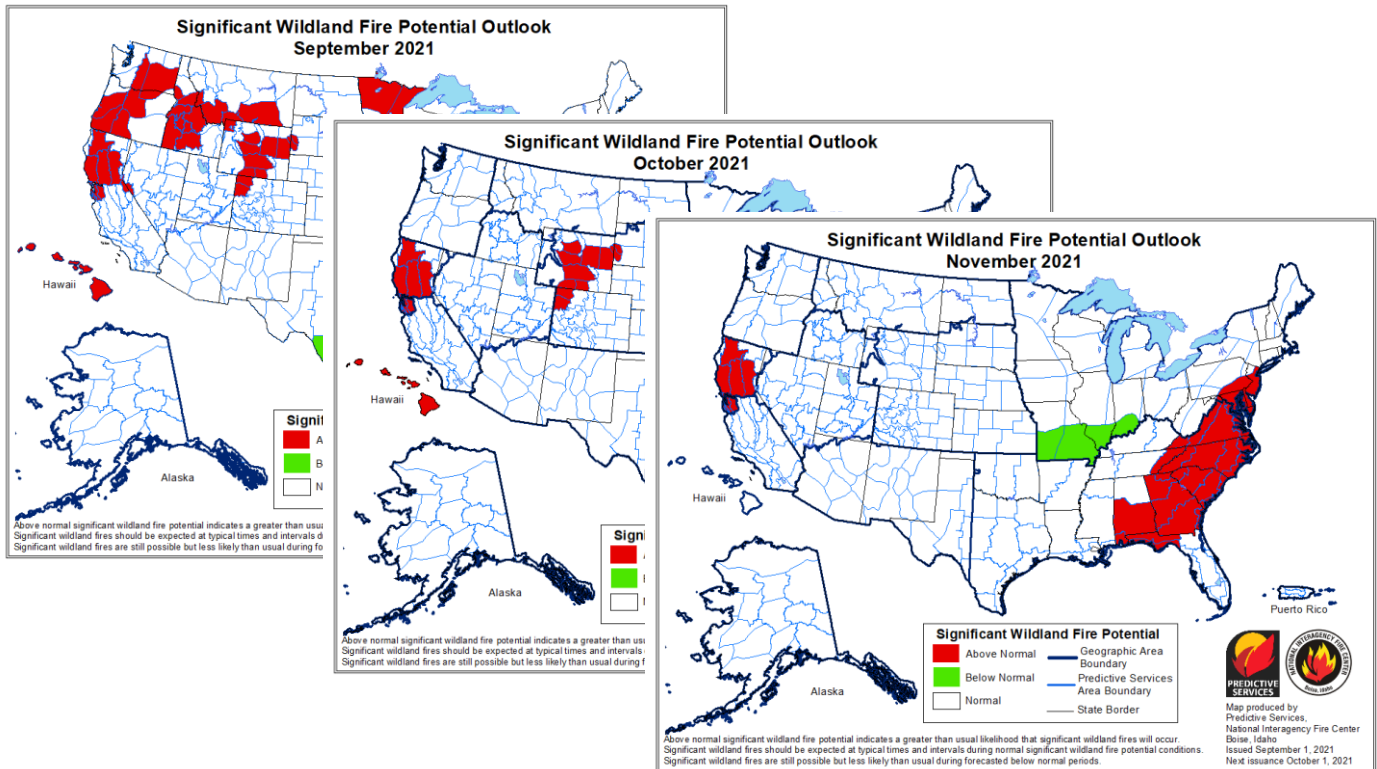


September 2021 - Wildland Fire Outlook

September 1, 2021



Significant Wildland Fire Potential -- September, October, November 2021 (September 1 2021, National Interagency Fire Center). <https://www.predictiveservices.nifc.gov/outlooks/outlooks.htm>.

SUMMARY

The Teton Interagency Dispatch area transitioned from two drier-than-normal months (June-July) to a wetter-than-normal August, with fire activity moderating after two fires in late July/early August were managed with Type 3 team organizations. Monsoon moisture from the Southwest and a cool-damp "August Singularity" event from Canada/Montana decreased our energy release component and fuel moistures. The area remains in moderate to severe drought conditions, with temperature and precipitation outlooks for drier-warmer than normal conditions into fall. For September-October, analyses and outlooks indicate normal wildland fire potential in the Dispatch Area, with significant fire potential continuing in eastern Wyoming.

- On August 25, after nearly seven weeks in Stage 1 Fire Restrictions, Bridger-Teton National Forest/Grand Teton National Park **returned to Moderate Fire Danger and lifted fire restrictions**.
- A transition to Normal fire potential** for September-October, per the Great Basin Coordination Center's monthly outlook: <https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf>
- Daily GBCC Fire Potential Briefing and related outlooks: <https://gacc.nifc.gov/gbcc/outlooks.php>

During an average fire season, based on a 20-year fire history from 2001-2020, Bridger-Teton National Forest will average 52 unplanned fires (32 natural starts per year, and 20 human-caused fires) for 16,522 acres per year. Grand Teton National Park will average 10 unplanned fires (six natural starts per year, and four human-caused fires) for 1332 acres per year.

Current fire conditions, indices and fire activity are at www.tetonfires.com. Local, regional and national outlooks are at <https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/outlooks>.

CLIMATE AND FUELS OUTLOOK

1. 30-day and 60-day Temperatures

WARMER SUMMER, COOLER AUGUST. The change from the past 60 days (right) to the past 30 days (left) show the effects of monsoon moisture patterns, with a shift from warmer overall (July and August) to more variable temperatures in August only.

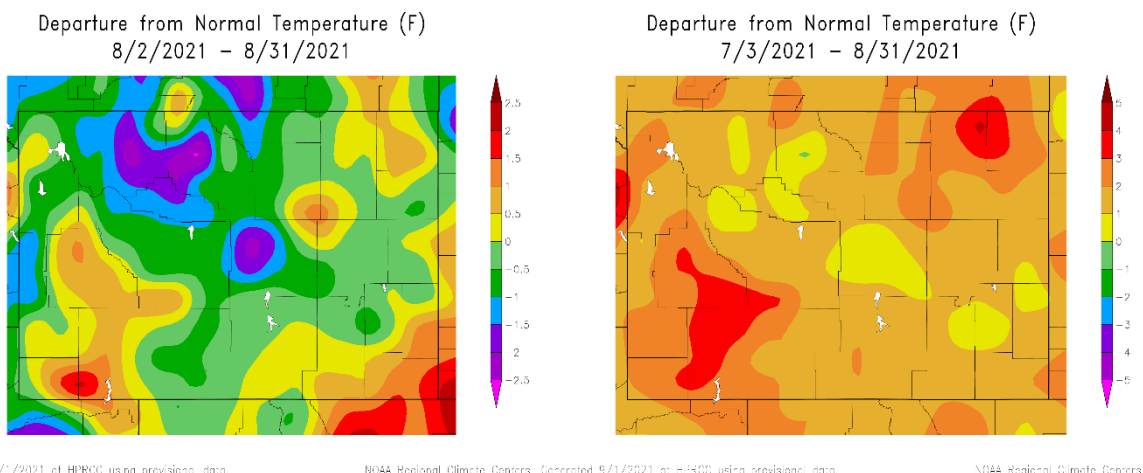


Figure 1a. Departure from Normal Temperature, Wyoming -- prior 30 days.

<https://hprcc.unl.edu/products/maps/acis/hprcc/wy/30dTDeptHPRCC-WY.png>

Figure 1b. Departure from Normal Temperature, Wyoming – prior 60 days.

<https://hprcc.unl.edu/products/maps/acis/hprcc/wy/60dTDeptHPRCC-WY.png>

2. Precipitation

Area precipitation for the past 30 and 90 days (through August 31) reflects the increased monsoon flow and low pressure from the Northwest/Canada, with the 30-day above-normal precipitation zones (Figure 2a) wetter when compared to the drier 90-day period (Figure 2b).

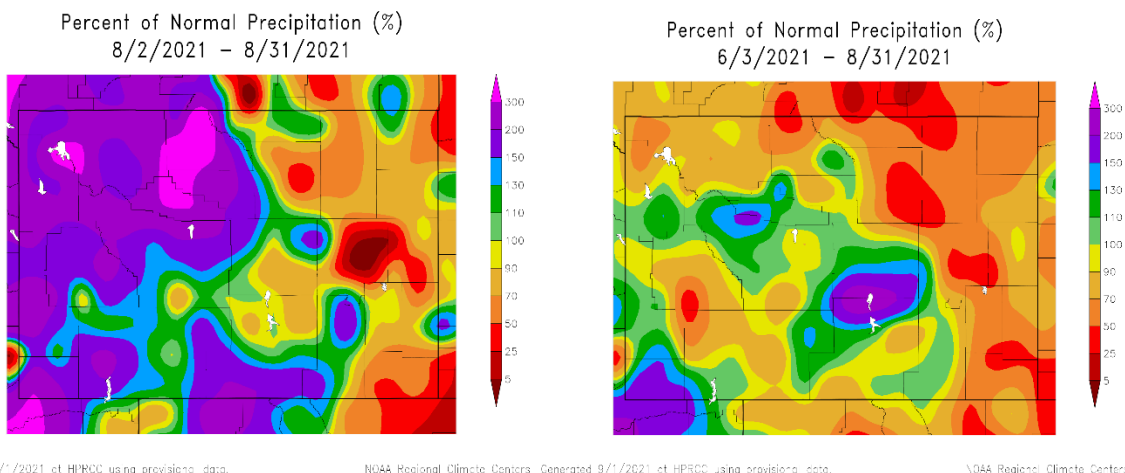


Figure 2a (left). Wyoming, Percent of Normal Precipitation for the past 30 days.

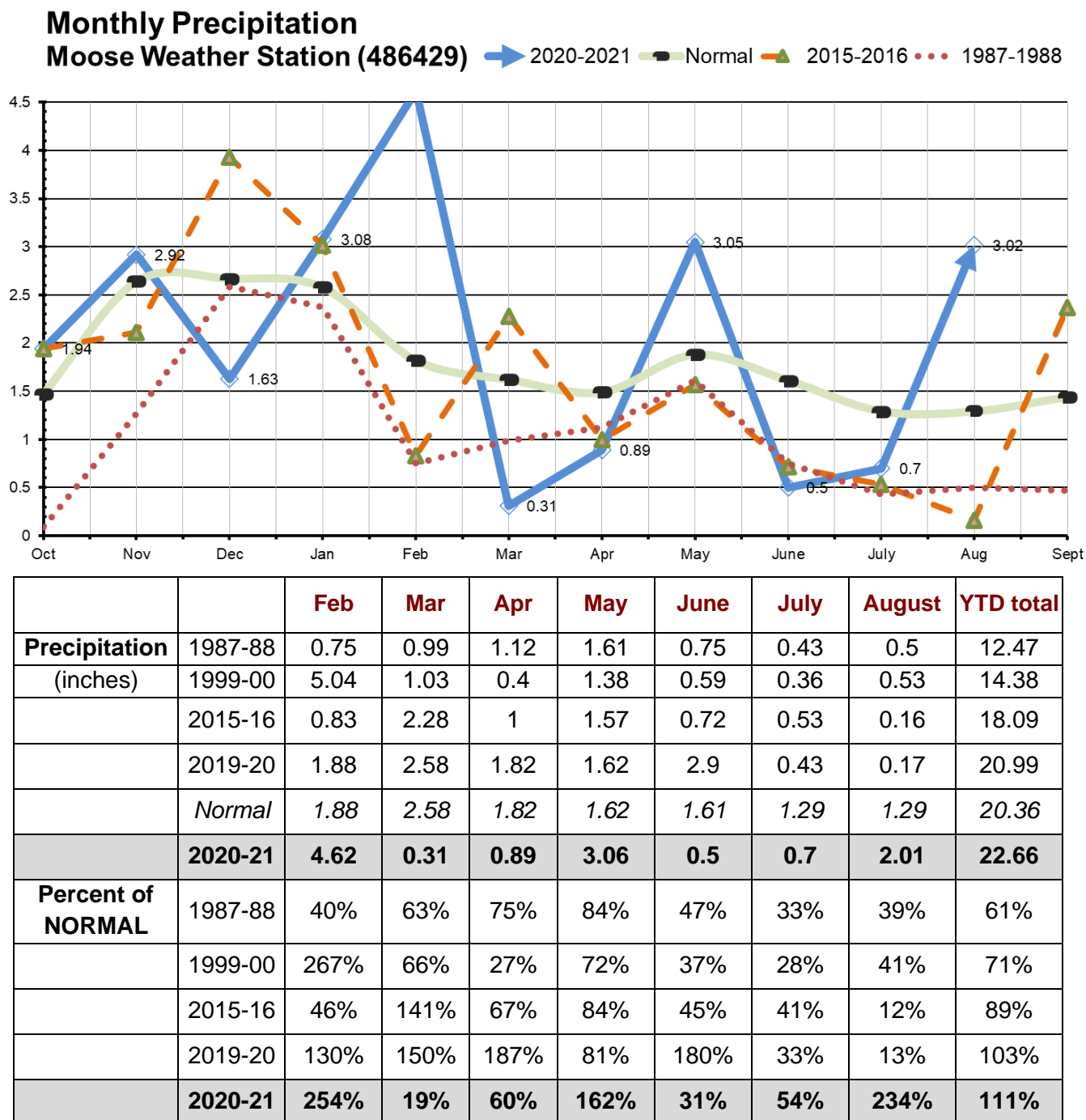
<https://hprcc.unl.edu/products/maps/acis/subgrn/WY/30dPNormWY.png>

Figure 2b (right). Percent of Normal Precipitation for the past 90 days.

<https://hprcc.unl.edu/products/maps/acis/subgrn/WY/90dPNormWY.png>

Precipitation tracking at the [Moose 1 NNE WY Climate Weather Station](#) -- the automated Climate Reference Station in the Applied Climate Information System in the Dispatch area -- is representative for lower elevation sites in Grand Teton National Park and North Zone BTNF sites. The station has recorded a pattern of extremes, with August receiving 243% of normal following a seasonal pattern of alternating above-normal and below-normal moisture. While June-July together received 43% of normal for 30-year precipitation norms, May and August were above normal, averaging at 198% of normal.

Table 2. Graph and Table: Precipitation, Moose Weather Station (Grand Teton National Park).



3. Drought Monitor

The U.S. Drought Monitor shows 98% of the West (excluding Wyoming) in drought conditions. In Wyoming, nearly 100% of the state exhibits some level of drought conditions, compared to 92% exhibiting drought conditions in 2020. Monsoon moisture in offered mitigation for much of the state's fire risk but did not offset drought indices. Seasonal curing and drying will likely increase fuel availability in 1000-hour fuels (downed logs), fine dead fuels and live fuels through September, though fire danger will be offset by seasonal cooling. Soil moisture outlooks reflect recent rainfall and are expected to moderate.

Figure 3a. U.S. Drought Monitor – West.

https://droughtmonitor.unl.edu/data/png/20210824/20210824_west_text.png.

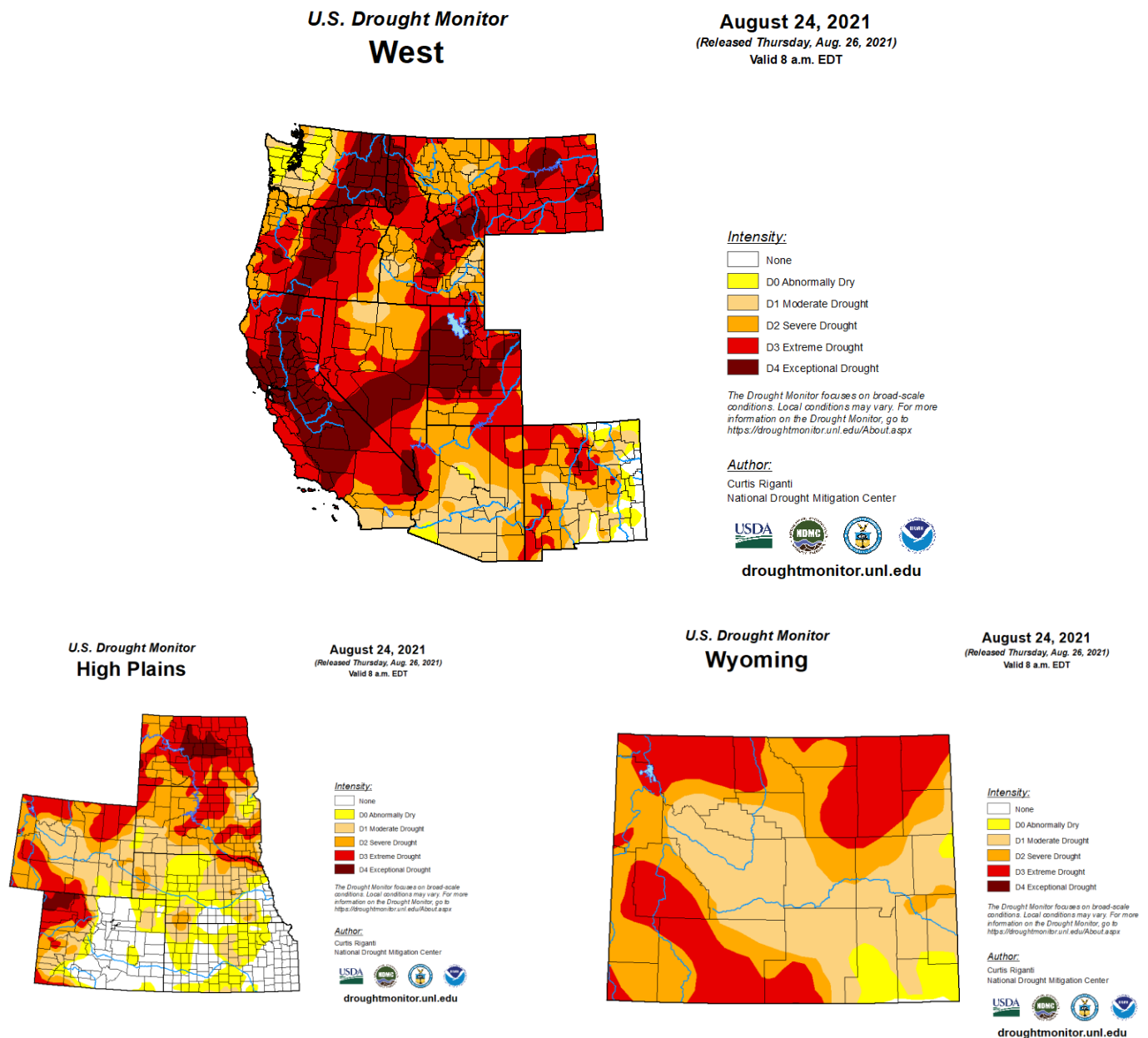
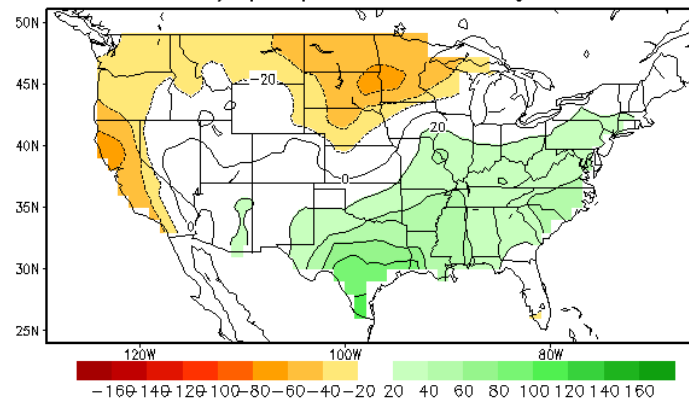


Figure 3b. U.S. Drought Monitor – USDA Northern Plains Climate Hub, current drought. [Current Map - High Plains | U.S. Drought Monitor \(unl.edu\)](#). **Figure 3c (right). U.S. Drought Monitor – Wyoming.** [Current Map - Wyoming | U.S. Drought Monitor \(unl.edu\)](#)

Lagged Averaged Soil Moisture Outlook for End of SEP2021
units: anomaly (mm), SM data ending at 20210831



Lagged Averaged Soil Moisture Outlook for End of NOV2021
units: anomaly (mm), SM data ending at 20210831

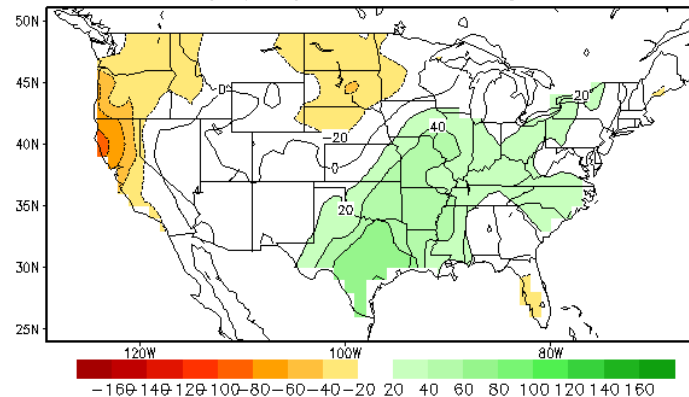


Figure 3d (above). Soil Moisture Outlook for end of September and November, 2021.

https://www.cpc.ncep.noaa.gov/products/Soilmst_Monitoring/US/Outlook/CAS/SM.shtml

4. Fuel Moisture and Energy Release Component

Sampling in Bridger-Teton National Forest and Grand Teton National Park show steady or drying fuel moistures, a reflection of August moisture that is balanced by seasonal curing.

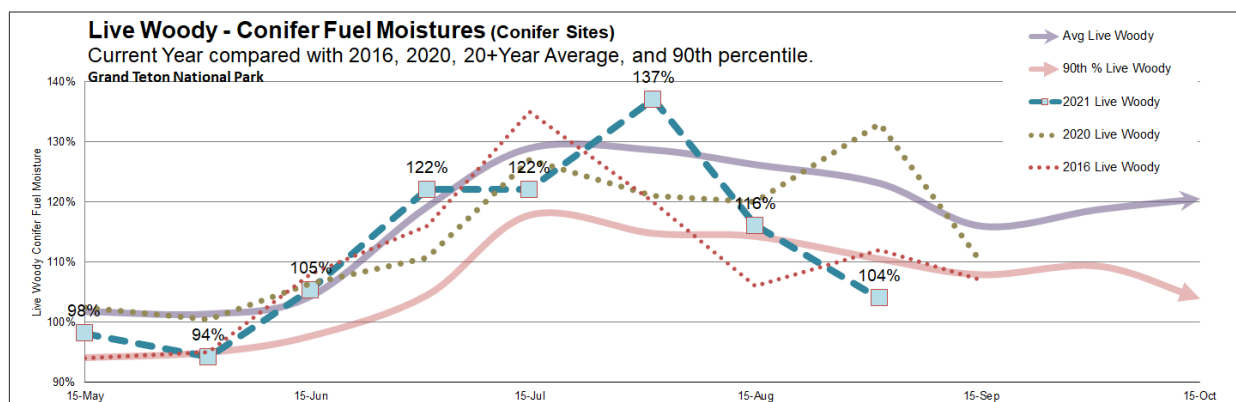
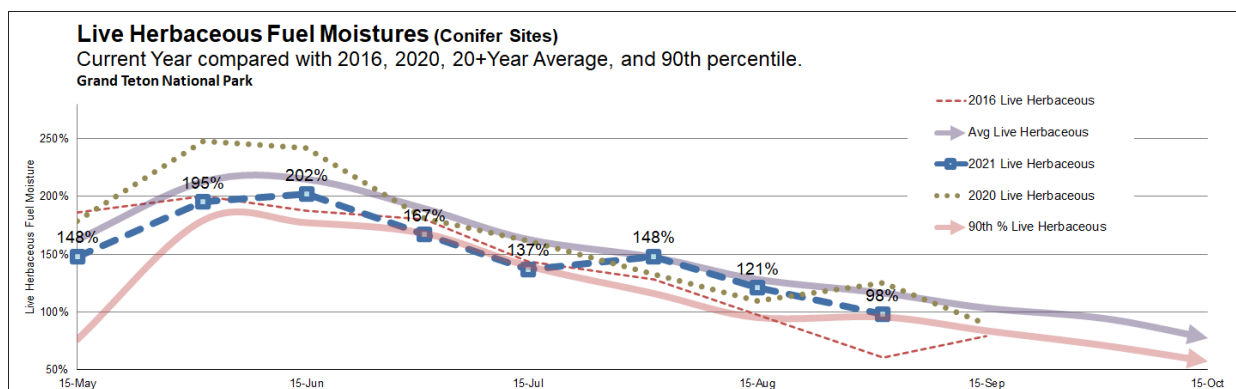
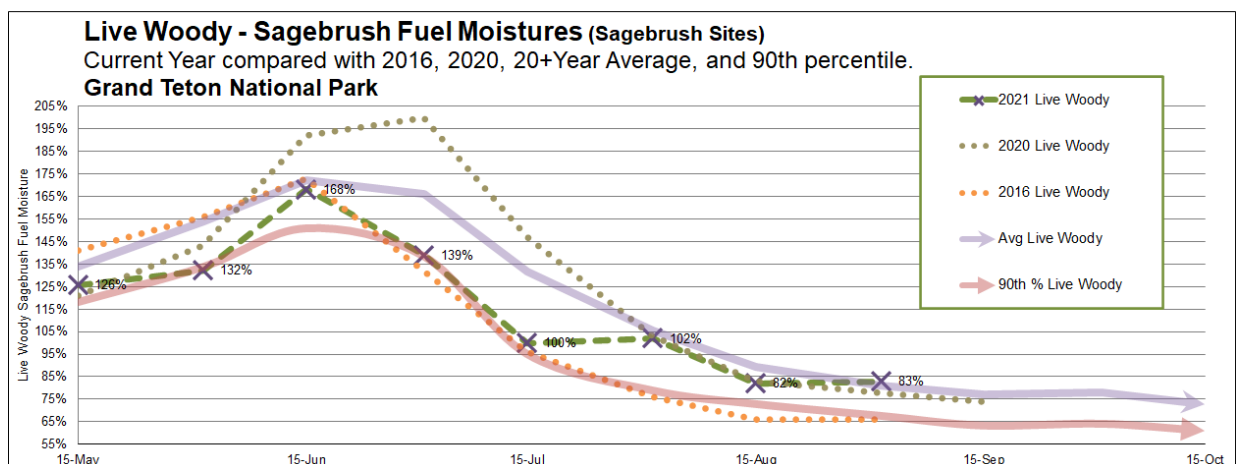
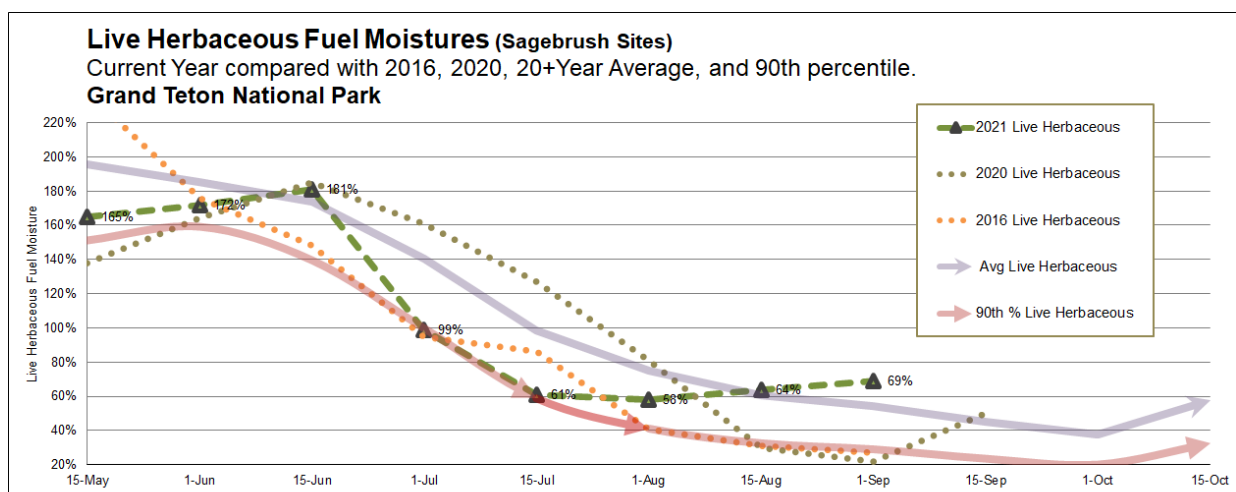
Sampling averages from August 31.

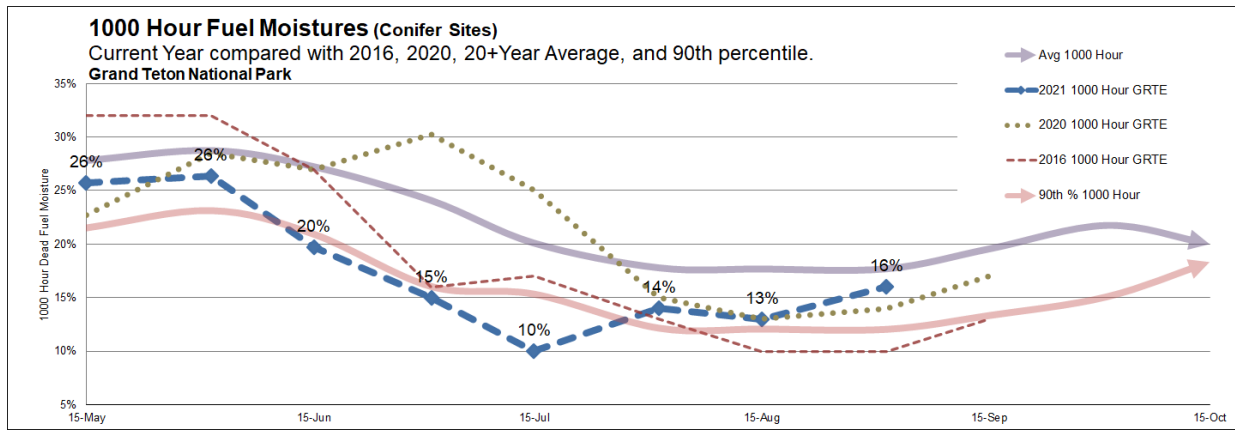
SITE TYPE	FUEL TYPE	East Zone BTNF	West Zone BTNF	North Zone BTNF	Grand Teton NP
Sagebrush	LH Grass				69%
	LW Sagebrush	86%	112%	107%	83%
Conifer	LH Grass			140%	98%
	LW Lodgepole	98%	128%		107%
	LW Fir (Douglas/Subalpine)	SF: 107%	SF: 118%	DF: 99%	DF: 104%
	1000 Hour Dead	13%	15%	14%	16%

Additional fuel moisture data is available at the National Fuel Moisture Database: [Current Fuel moistures in Bridger-Teton NF and Grand Teton NP](#).

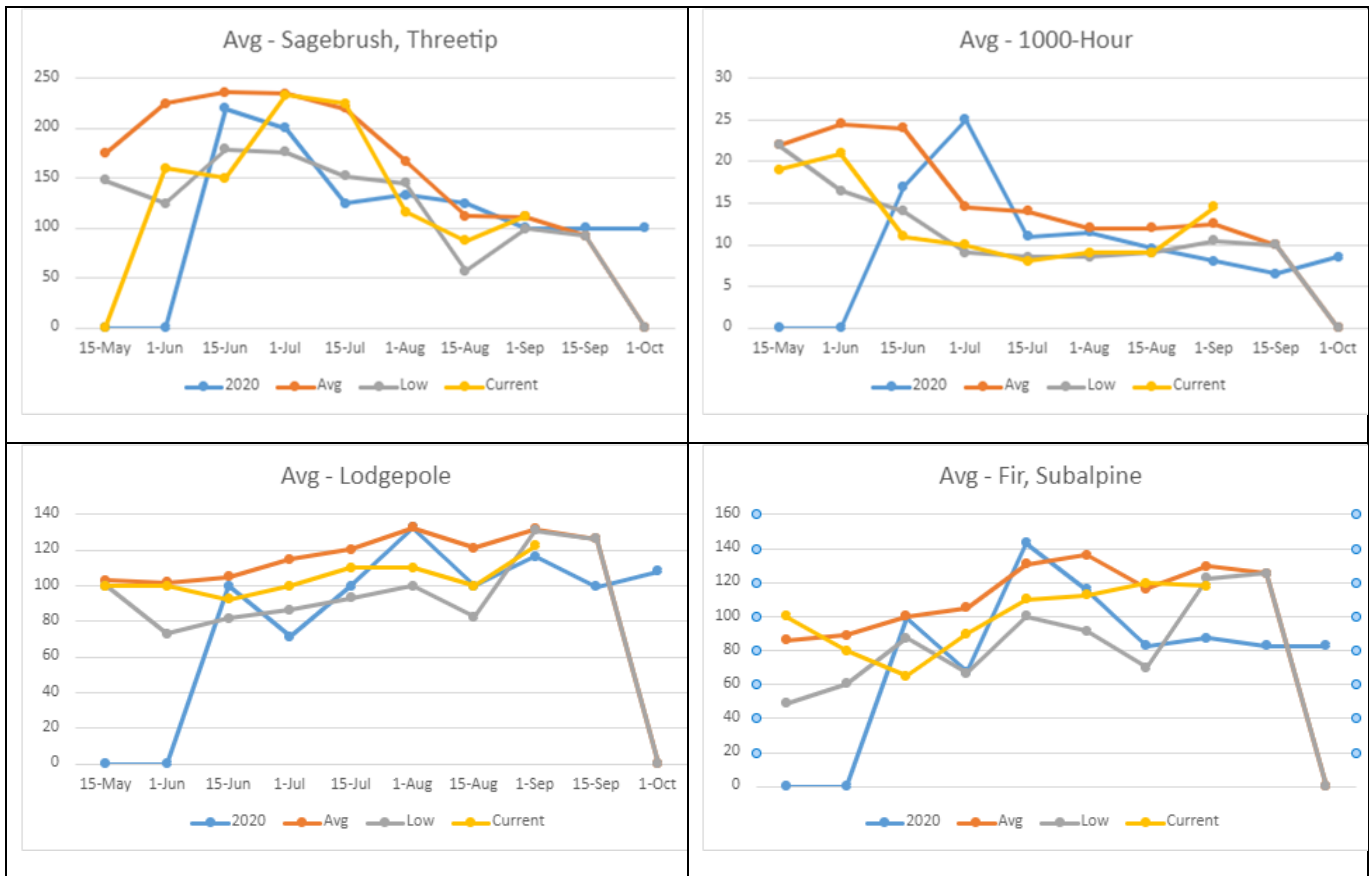
Fuel Moisture – Grand Teton National Park. At long-term sampling stations in Grand Teton National Park, a partial sampling of sites reflected the impact of monsoon moisture, with fuel moistures moving closer to normal for September 1. The exception is live herbaceous and live woody moistures at conifer sites, with readings trending at or below the 90th percentile.

Fuel Moisture Graphs – Grand Teton National Park





Fuel Moisture Graphs – West Zone, Bridger-Teton National Forest

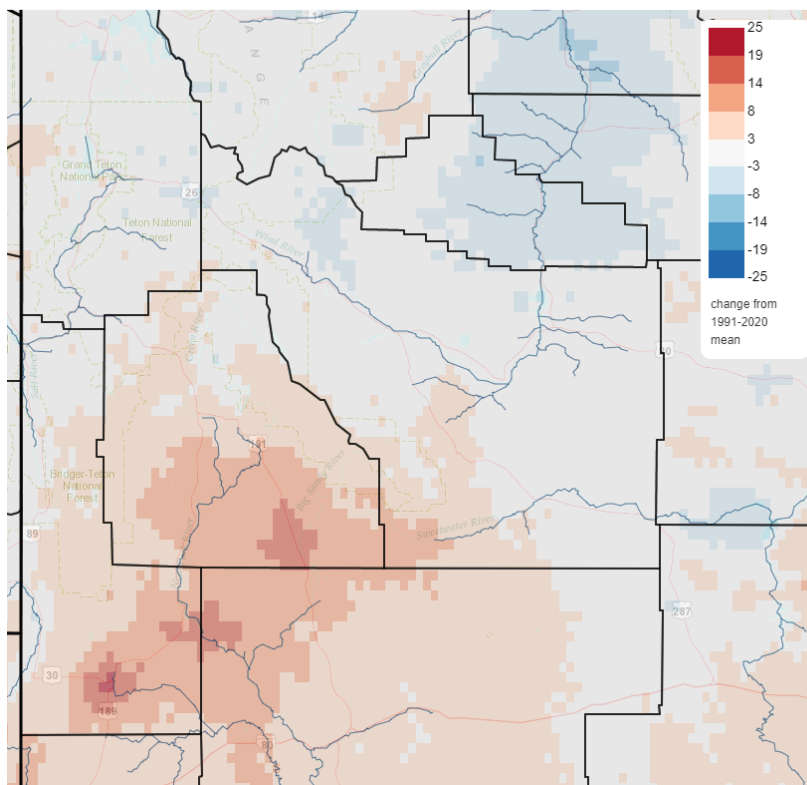


Energy Release Component Anomaly: August 30 2021 compared to 30 year average.

Energy Release Component, as visualized with the Climate Mapper / Toolbox app, reflects the impact of August moisture, with the northern half of the TIDC area at normal and the southern half above normal for this time of year, compared to the 1991-2020 mean. (Note: this modeling and assessment uses fuel model G - dense conifer forests.)

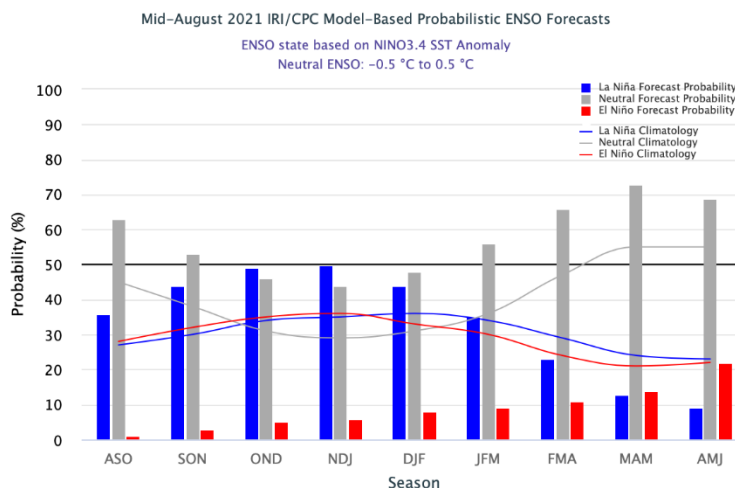
Link: [Climate Toolbox](#).

Energy Release Component Anomaly
2021/08/30



5. El Niño / La Niña / ENSO-Southern Oscillation)

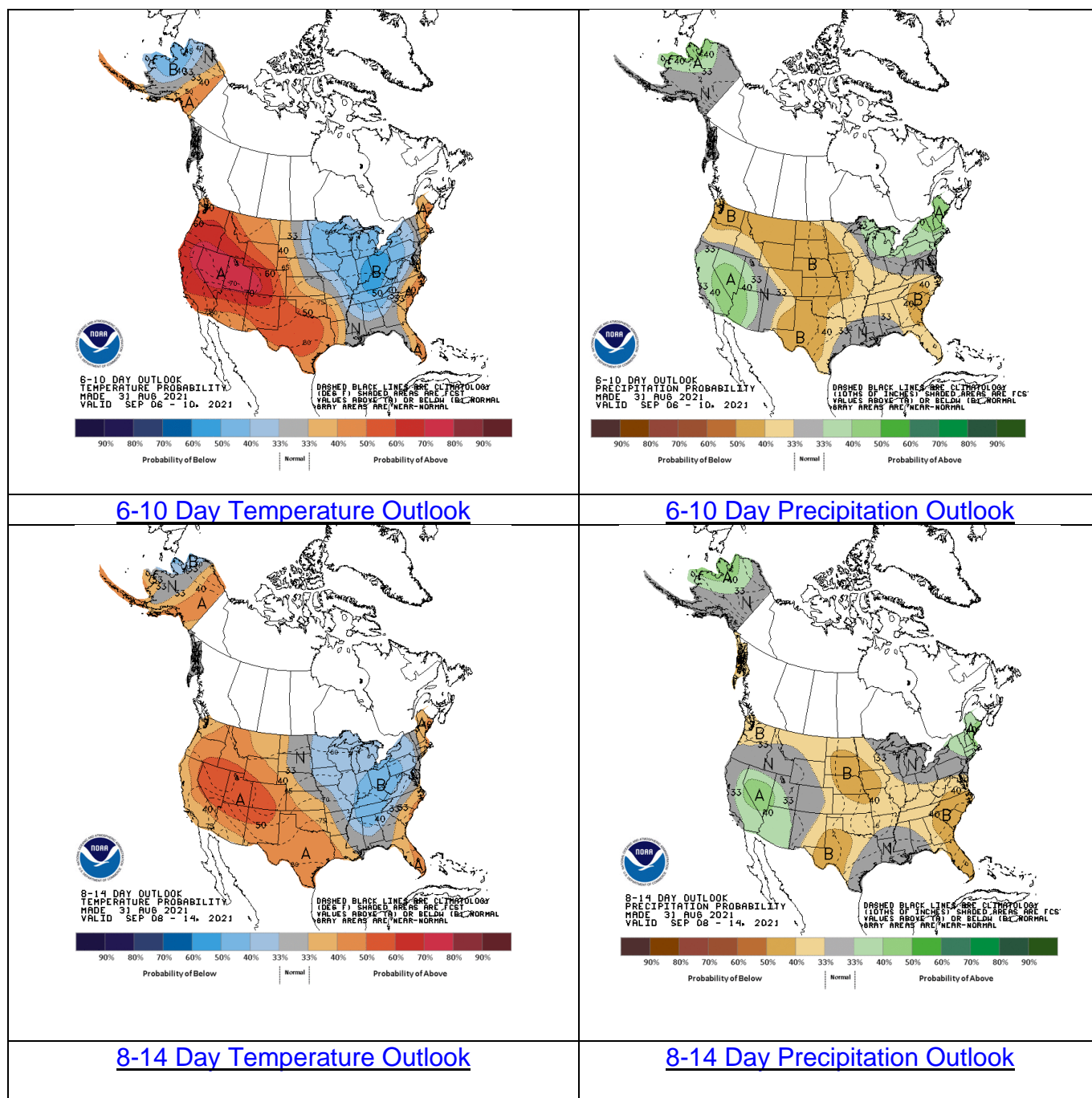
The mid-month ENSO Forecasts (figure linked below, from [IRI – International Research Institute for Climate and Society | Quick Look \(columbia.edu\)](#) tracks *El Niño* (warm) and *La Niña* (cool) events in the tropical Pacific. ENSO neutral conditions are forecast to continue through fall; this can signal a return to climatic norms, but outlooks through November call for dry-warm conditions and drought impacts.

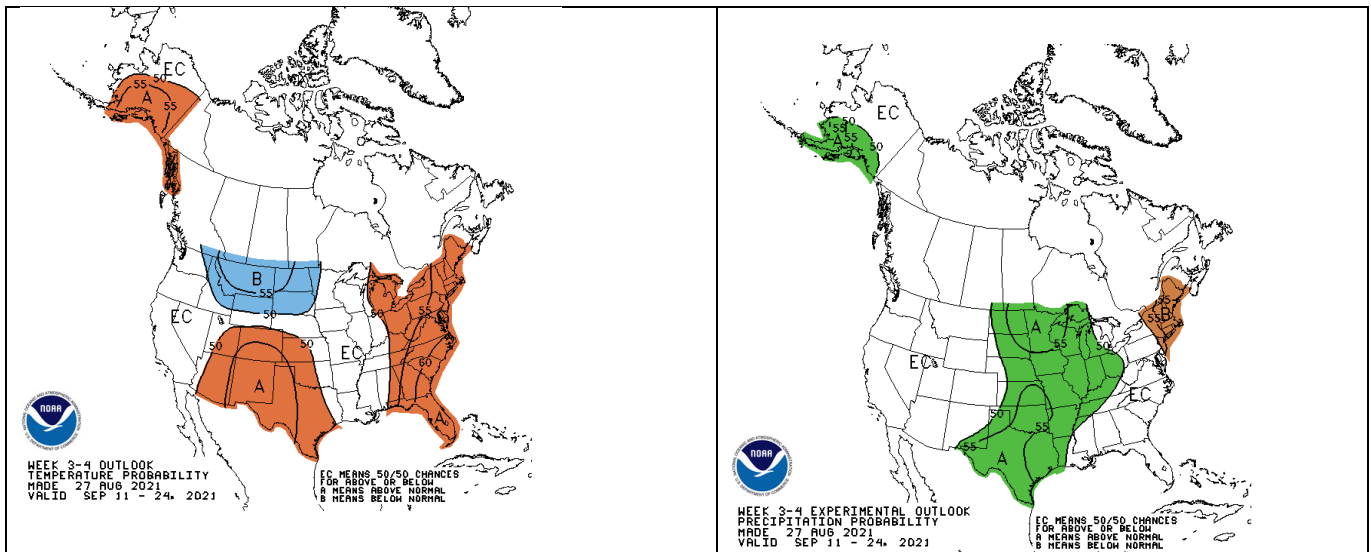


Current *ENSO* neutral conditions will likely continue through fall of 2021 (greater than 50% chance for ENSO neutral through September-October-November 2021). By October-November-December 2021, the probabilities trend between neutral and a return to *La Niña* conditions next winter.

6. Temperature and Precipitation Outlooks

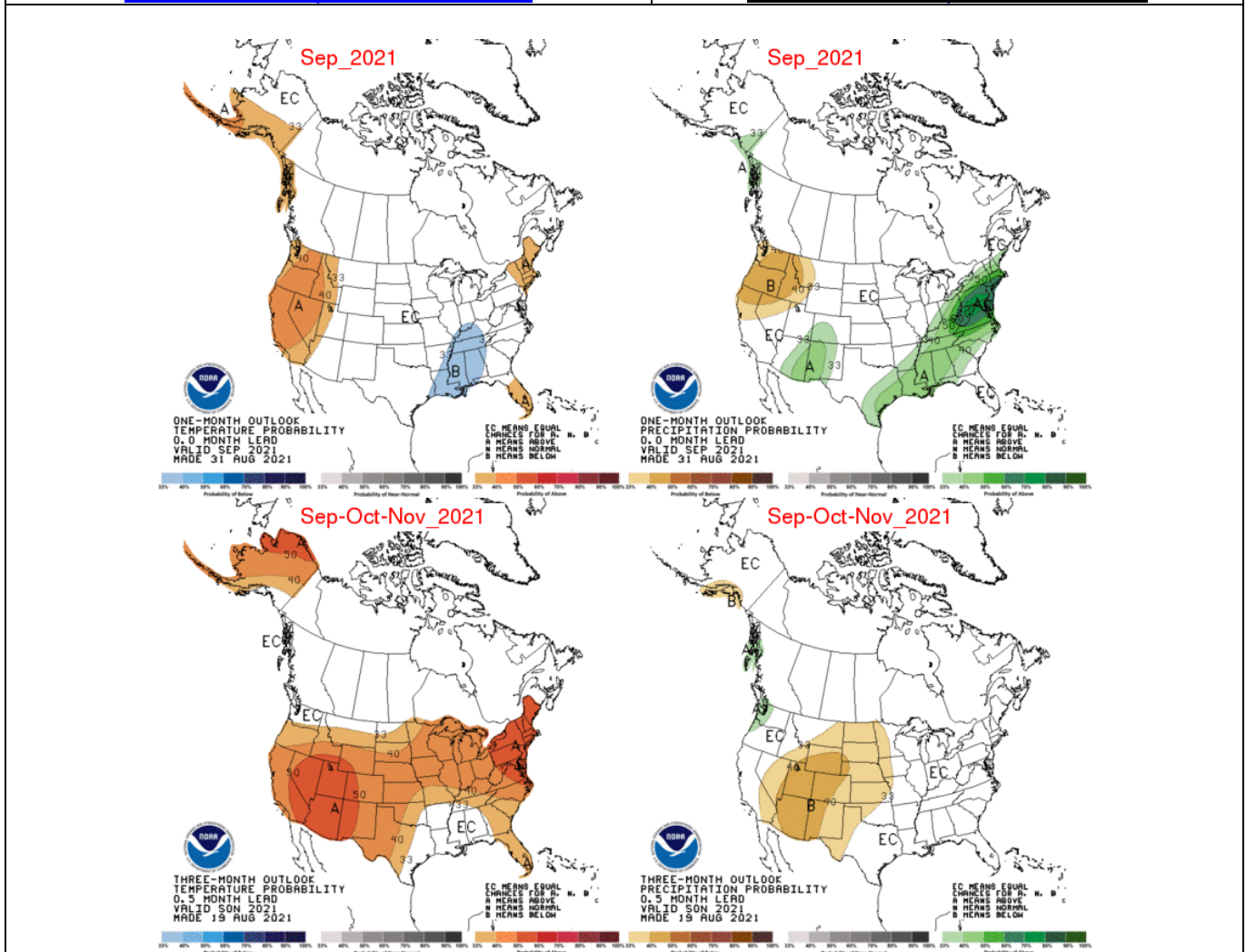
There is increased variability in outlooks but most call for warmer temperatures and lower than normal precipitation through November.





3-4 Week Temperature Outlook

3-4 Week Precipitation Outlook



Temperature

Precipitation

GEOGRAPHIC AREA OUTLOOKS

The Teton Area fire zone is within the Great Basin Geographic Area. Fire seasons in our zone track with similar conditions in adjacent areas within the Rocky Mountain and Northern Rockies geographic areas, which converge within the Greater Yellowstone Area (GYA) and share fire activity trends.

Excerpts of National/Regional Outlooks from “National Wildland Significant Fire Potential Outlook” (August 1, 2021, NIFC Predictive Services). https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.

National – Executive Summary (excerpts)

Fire activity continued at very high levels through August. Significant fire activity moderated across Idaho and Montana the latter half of August, but increased significantly across the Northwest, northern California, and Minnesota. The national preparedness level remained at five through August. At 71 days, the current streak at preparedness levels four and five are tied for the third longest period ever with 2020. Only 2017 at 75 days, and 2002 at 88 days, were longer.

Drought remains across more than 95% of the West with more than half of the West in the highest two categories of drought. Drought intensified across the northern Plains and much of Minnesota, but relief in drought continued across the Southwest, southern Great Basin, and Colorado Rockies. Above normal temperatures continued in California, Oregon, Washington, and Minnesota but were closer to average across the Southwest, Great Basin, and Rockies. Strong monsoon surges brought above normal rainfall to much of the Great Basin and Northern Rockies. However, rainfall was well below average for the West Coast, Nevada, and northeast Minnesota. Climate outlooks indicate warmer than normal conditions are likely for much of CONUS through fall. Wetter than average conditions are likely across western Washington with below normal precipitation likely across the Southwest, Great Basin, central Rockies, and much of the Plains.

Climate and Fire Potential Outlooks

ENSO-neutral conditions are present with near-to-below average sea surface temperatures (SSTs) over much of the equatorial Pacific Ocean. Other teleconnection patterns, like the Madden-Julian Oscillation, are likely to play bigger roles in shaping the weather and climate patterns during ENSO-neutral conditions. The Climate Prediction Center (CPC) forecasts ENSO neutral conditions will continue through September with 70% chance of La Niña conditions developing late fall into winter (November through January).

- Above normal significant fire potential is forecast to continue for September across much of the Northwest and portions of the Great Basin, Northern Rockies, and Rocky Mountain Geographic Areas. Most of these areas will return to normal fire potential in October and November except for portions of Wyoming, northwest Colorado, and the Black Hills, which will remain above normal into October.
- Much of northern California is forecast to have above normal potential through November with leeward locations in Hawaii likely to have above normal significant fire potential into October.

Great Basin

Significant wildfire potential is expected to remain above normal through September in the higher elevations of the Sierra Front and over portions of southern and western Idaho, which remain dry. Significant long-term drought remains in these areas with lower-than-average fuel moisture.

Temperatures during August have been near to just below normal over much of the eastern two-thirds of the Great Basin and just above normal over western Nevada into central and southwest Idaho. Cool and wet storm systems moved across the northern and eastern half of the Great Basin in August bringing periods of cooler temperatures, breezy winds, and widespread precipitation. Most of Idaho, Wyoming, and Utah received 2-4 times the normal rainfall for August. The recent active weather pattern has not alleviated the long-term drought in the eastern half of the Great Basin, but there was some improvement ... but the long-term precipitation deficit remains larger than the above normal precipitation received this summer

Great Basin Coordination Center – Seasonal Outlook for August-November 2021 (excerpt).

<https://gacc.nifc.gov/gbcc/predictive/docs/monthly.pdf>

Fire potential returning to Normal for Western Wyoming. Above normal fire potential is expected in September for the mid to higher elevations of the Sierra Front and over parts of Southern and Central Idaho. Otherwise, initial attack will likely continue throughout September, but most fires will likely remain small. Areas of the Sierra Front may see above normal fire potential into the fall/winter if conditions remain dry. Normal (low) fire potential should return to most other areas.

CURRENT FIRE ACTIVITY

Teton Interagency Dispatch Center

www.tetonfires.com / <https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/>.
<https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/predictive-services/intelligence>

A mid-summer dry period with elevated fire danger was mitigated by the mid-August by variable but mostly above-normal precipitation. Fire activity may increase with continued seasonal drying.

As of September 1, 155 abandoned non-escape campfires have been reported compared to **136 in 2020** at this time and **133 in 2019**. Fire Restrictions were rescinded on August 25 and fire danger returned to Moderate for Bridger-Teton National Forest and Grand Teton National Park. [Restrictions | Teton Interagency Fire \(nifc.gov\)](#).

Year-to-Date Fire Activity for Dispatch Center response zones, September 1, 2021.

<https://gacc.nifc.gov/gbcc/dispatch/wy-tdc/home/sites/default/files/site-files/2021%20Fire%20Numbers%20and%20Stats.xlsx>

Teton Interagency Fire Management Area Totals	Human Fires	Human Acres	Natural Fires	Natural Acres	RX Fires	RX Acres	Abandoned Non-escape Campfires
	11	9.86	25	246.65	10	1918	155

Selected Sources

- Precipitation Tracking: <https://water.weather.gov/precip/>
- Precipitation Tracking focused on [Snotel sites, Wyoming](#) (beta site)
- 3-Month Climate Outlooks: <https://www.cpc.ncep.noaa.gov/products/predictions/90day/>
- Drought.gov Portal / Fire: <https://www.drought.gov/drought/data-maps-tools/fire>
- Drought.gov Portal / Wyoming: <https://www.drought.gov/states/wyoming>
- Intermountain West Climate Dashboard: <https://www.colorado.edu/climate/dashboard.html>
- National Wildland Fire Potential: https://www.nifc.gov/nicc/predictive/outlooks/monthly_seasonal_outlook.pdf.
- Great Basin – Predictive Services/Outlooks: <https://gacc.nifc.gov/gbcc/outlooks.php>.
- Rocky Mountain – Predictive Services/Outlooks: <https://gacc.nifc.gov/rmcc/outlooks1.php>.

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